

**SUMMARY OF THE  
U.S. NUCLEAR REGULATORY COMMISSION/U.S. DEPARTMENT OF ENERGY  
QUARTERLY MANAGEMENT MEETING  
IN ROCKVILLE, MARYLAND  
ON FEBRUARY 19, 2004**

**Introduction**

The U.S. Nuclear Regulatory Commission (NRC) and U.S. Department of Energy (DOE) held a public Quarterly Management Meeting for the Yucca Mountain Project (YMP) on February 19, 2004. The purpose of this meeting was to discuss the overall progress of the project at the potential geologic repository site at Yucca Mountain, Nevada. The meeting was hosted at the NRC Headquarters in Rockville, Maryland, with video and audio connections to the DOE Office of Repository Development in Las Vegas, Nevada, and the Center for Nuclear Waste Regulatory Analyses (CNWRA) in San Antonio, Texas. Other participants included representatives from the Nuclear Energy Institute (NEI), NRC Region IV, Bechtel SAIC Co. LLC (BSC), General Accounting Office (GAO), State of Nevada, Nevada Nuclear Waste Task Force, Clark County, and interested members of the public.

**NRC Opening Remarks**

Mr. Martin Virgilio, Director of the NRC's Office of Nuclear Materials Safety and Safeguards (NMSS), began his opening remarks by stating that the DOE/NRC Quality Assurance (QA) meeting held on February 18, 2004, was very productive. He went on to cover three major topics in his opening remarks, including (1) resolution of Key Technical Issue (KTI) Agreements, (2) recent evaluations performed by the NRC concerning DOE's technical documents, and (3) the Technical Exchange on February 3-4, 2004, regarding level of detail (especially "design" detail).

Mr. Virgilio noted that measurable progress has been made in the area of KTI Agreements, but emphasized the importance of adhering to the schedule, especially for igneous activity. He also stated that, after reviewing the Technical Basis Documents (TBDs), the NRC staff appreciates the bundling approach, which provides a better context for reviewing the issues.

Regarding the NRC's evaluations of DOE technical documents, Mr. Virgilio indicated that a publically available report summarizing the three evaluations will be available in the March/April time frame. He also provided the basis for the NRC's decision to conduct the evaluations using a "no-observer" approach. He explained that these evaluations were outside the scope of the DOE/NRC Pre-licensing interactions agreement and were not in a meeting-style format.

Mr. Virgilio also indicated that the Technical Exchange regarding level of detail was a success, with the parties reaching a common understanding of the level of detail that DOE will provide in its license application (LA) and the need for additional interaction concerning the classification of items that are important to safety.

In concluding his opening remarks, Mr. Virgilio stated that the NRC is continuing to develop its inspection program, which will ultimately transition to increased participation by Region IV.

### **NRC Program Update**

Ms. Janet Schlueter, Chief of the NRC's High-Level Waste (HLW) Branch in the NMSS Division of Waste Management, provided an update concerning the NRC's program activities since the Quarterly Management Meeting in November 2003. Her remarks addressed the staff's review of bundled KTI agreements, an update of the Risk Insights Baseline report, the staff's ongoing efforts to update the Integrated Issue Resolution Status Report (IIRSR), development of the inspection program, and the staff's interactions with the NRC's Advisory Committee on Nuclear Waste (ACNW) and others.

Ms. Schlueter indicated that since last October, the NRC has received seven Technical Basis Documents (TBDs) that address 81 KTI Agreements. She also noted that the NRC has expressed concerns to DOE regarding the lack of supporting information and documents referenced in the TBDs that have been submitted for NRC review. Specifically, Ms. Schlueter mentioned that in a letter dated December 23, 2003, the NRC asked DOE to provide 50 reference documents to enable the staff to complete its reviews. In its response dated January 30, 2004, DOE provided a detailed plan on how it intended to provide both the NRC and the public with the supporting information, including the status of all 50 documents requested by the NRC. Since then, DOE has provided most of these documents to the NRC and has simultaneously made them available to the public. Ms. Schlueter encouraged DOE to "stay on track" with its current KTI Agreement schedule, under which DOE would address the remaining agreements by late August of this year, providing the NRC with review time prior to receipt of the LA (planned for December 2004).

Ms. Schlueter also stated that the staff has continued its activities regarding the Risk Insights Initiative and has integrated the risk insights into various program areas, including the ongoing review of the TBDs. She added that the staff will likely issue an updated version, based on new information, before receipt of the LA.

In addition, Ms. Schlueter indicated that in June 2002, the staff issued the Integrated Issue Resolution Status Report (IIRSR) to reflect the then current status of the 293 agreements and the staff's understanding of the performance of the potential repository from a systems approach. The integrated sub-issues approach also aligns with the structure of the current Yucca Mountain Review Plan and reflects the staff's approach to reviewing an LA. She indicated that since that time, the staff has increased its knowledge and understanding of the repository and its potential performance; however, the status of many agreements has changed. As a result, the staff believes that it will be of benefit to the NRC staff and the agency's stakeholders to issue an update to the IIRSR before receipt of the LA.

As for the ongoing development of the NRC's inspection program, Ms. Schlueter stated that the staff is continuing its efforts to integrate risk insights into the development of various aspects of the inspection program, which will be in effect if the NRC docket the LA. The staff has issued several inspection procedures and continues to work with the Region IV office and the CNWRA to develop additional procedures. The NRC's Region IV staff is also assisting

headquarters in qualifying staff as HLW inspectors. One has been qualified to date, and the NRC expects two others to be qualified by December of this year.

In concluding her remarks, Ms. Schlueter stated that the staff is working diligently to issue a publicly available final report on the findings of the three-part evaluations of the DOE program, which the NRC's teams of experts completed in the November – January time frame.

### **DOE Program Update**

Dr. Margaret Chu, Director of DOE's Office of Civilian Radioactive Waste Management (OCRWM), provided an update from the DOE Program perspective. Specifically, she covered the breakdown of the proposed \$880 million budget for fiscal year (FY) 2005 into three major components, including the repository, transportation, and waste acceptance. Dr. Chu also explained the planned transition of the Management Improvement Initiatives (MII) to the various line organizations to continue as routine business practices. She indicated that, via a letter to the NRC, DOE will document the details of closure of the MII. Dr. Chu also summarized the current status of the silica screening program and indicated that two known cases of silicosis exist to date. She further indicated that after hearing allegations of document falsification regarding test results for dust in the Exploratory Studies Facility, she has asked DOE's Office of the Inspector General to investigate the allegations. Dr. Chu added that although this issue is not a regulatory matter for the NRC, the Program remains committed to ensuring occupational safety in conjunction with a safety-conscious work environment (SCWE).

### **DOE Yucca Mountain Project Update**

Mr. John Arthur, Deputy Director of DOE's Office of Repository Development (ORD), provided the YMP update. He began by announcing DOE's pending decision that he will function as the Chief Nuclear Officer and will certify DOE's input to the Licensing Support Network (LSN). The DOE input to LSN is projected to contain approximately 30 million pages, comprising about 3 million documents, and is about 50 percent complete. Mr. Arthur also confirmed that DOE will respond to the NRC's letter on this subject, dated February 5, 2004. In addition, he stated that the Disposal Decision Plan is expected to be available in June and that DOE will brief the NRC on the details of that plan.

Mr. Virgilio asked what Mr. Arthur meant by the statistic that the LSN is 50 percent complete. Mr. Arthur explained that about half of the pages are nearing readiness to be placed in the LSN, and that they have been reviewed for accuracy and have been cleared with respect to sensitivity and security.

Mr. Arthur then expressed appreciation for the valuable insights and lessons learned from the NRC's three technical evaluations, especially in terms of the recognition that the technical documents need to be written in a more transparent style and be as standalone as practical.

Mr. Arthur also provided an update concerning the annunciator panel status and the role of the Leadership Council. He explained that the Leadership Council meets every 2 weeks to review selected condition reports (CRs) and the bases for late actions. Mr. Arthur noted that while progress has been made, the process needs to become stabilized and decisions regarding the "white" (i.e., no data population) and "gray" (i.e., awaiting final approval) indicators

need to be made. The NRC requested an interaction to discuss performance indicators, including those that are "red" and those that are "yellow" and declining.

The NRC staff inquired about incorporating the performance metric for "human performance" in the panel. DOE noted that most human performance problems are in the areas of skill-based and procedural noncompliance. Furthermore, implementations of six key project procedures (including those for data, software, and models) comprise the majority of problems in this area. DOE added that their senior managers have taken action to meet with the managers of the three offices with the highest numbers of human performance issues. Additionally, they will emphasize the need for improvement in the area of human performance with approximately 200 project managers and supervisors in a quality-focus meeting soon.

In response to a question from the NRC concerning where the human performance metric would be placed on the panel, Mr. Dennis Brown, Director of the OCRWM Office of Quality Assurance (OQA), indicated that although a final decision has not yet been made, a human performance indicator could be placed in the SCWE box. DOE agreed to provide a briefing to the NRC on the panel and selected individual metrics.

Mr. Virgilio asked what corrective actions DOE has planned to improve the implementation of six procedures that comprise more than half of the procedural noncompliance issues. Mr. Brown indicated that this is being handled through the action plan regarding human performance, and added that the action plan includes activities such as "pre-job briefings."

Mr. Arthur then provided an overview of the status of the commitments described in DOE's letter to the NRC dated May 29, 2003. Specifically, he indicated that 8 of the 13 actions have been closed. In particular, Mr. Arthur discussed DOE's new Corrective Action Program (CAP), the status of major corrective actions that are currently underway, and personnel changes in the Employee Concerns Program. He also indicated that DOE is aggressively recruiting someone to manage the Employee Concerns Program. Mr. Arthur also noted Mr. John Streeter's good work in managing the program in the interim. In addition, in response to the NRC's question regarding the timing for completion of commitment number 13 in DOE's letter dated May 29, 2003, Mr. Ziegler, Director of the Office of License Application and Strategy in DOE's Office of Repository Development, responded that the commitment action is expected to be closed within the next 60 days (by April 2004). DOE's Commitment number 13, in its May 29, 2003, letter, indicated that DOE would provide a semiannual report to its employees to communicate successes, lessons learned, and emphasize commitment to accountability. This commitment was to be fulfilled in October 2003. Even though information was communicated to employees in October 2003, DOE has deferred closure of this commitment until the process for reporting semi-annually has been institutionalized.

Mr. Arthur then went on to discuss the results of several recent independent assessments of DOE programs. Specifically, he outlined the process for integrating and prioritizing the various recommendations in the performance management assessment, the organizational assessment, the SCWE external survey and the quality assurance management assessment (QAMA). Mr. Arthur also described the five-phase approach used to evaluate the set of recommendations, the grouping of like recommendations, and the prioritization method. He added that those recommendations that provide the greatest benefit and can be implemented

in a reasonable time frame will be done first, with several items being deferred until after submission of the LA.

Mr. Matula, NRC, expressed concern regarding the transition of the Corrective Action Program (CAP) to line management. Mr. Arthur and Mr. Brown indicated that DOE will develop a formal transition plan and that the transition will occur gradually and systematically. However, they stated that the project must move toward holding the line accountable for CAP with strong oversight by the OQA.

### **License Application Status**

Mr. Ziegler reported progress in DOE's preparation of the LA and in the technical areas of data qualification, software verification, and model validation. However, he noted the possibility of slippage of the schedule for preparing some analysis and model reports (AMRs), and stated that DOE would examine whether the delays in submitting AMRs to the NRC could impact the staff's review of the seven TBDs for which the NRC has requested 50 specific references. Mr. Ziegler also provided DOE's views regarding the NRC's relative risk ranking of the model abstraction categories and four additional areas. He noted that there is agreement in most areas and that DOE staff provided a basis for the few instances in which there are differing views. Mr. Ziegler also discussed the basis for the differences, and the NRC requested continuing discussions on this topic. Mr. Virgilio indicated that the NRC staff will be focusing more on DOE's Total System Performance Assessment model.

Mr. Ziegler indicated that DOE will identify the data inputs for the safety analyses that are used in the LA required to be qualified and are indicated as "to be verified" (or TBV) at the time of LA submittal. He also confirmed that the data to be used in the LA must be of a high quality for its intended use.

Mr. Virgilio asked if DOE's LA schedule is flexible enough to allow time to incorporate the NRC's review results. Mr. Ziegler replied "yes, depending on the specific comments received" and any issues in comments received from the NRC after September would be resolved in the license application review process.

### **Quality Assurance Program Update**

Mr. Dennis Brown (DOE) presented an overview of the QA meeting from the previous day and indicated it provided for excellent discussion of both the improvements and remaining weaknesses in the DOE QA program. He indicated the Navarro Quality Services contract had been extended and that additional QA/nuclear licensing expertise had been added with the hiring of Warren Dorman, who recently retired from Progress Energy.

He discussed the current status of the CAP and stated that improvements in this area include implementation of a new single CAP, increased management oversight through the CAP Oversight Committee as well as monitoring the effectiveness of the CAP. For example, the line organizations are currently performing assessments of the CAP to identify program constraints and areas where there may be difficulty in meeting their goals or requirements. He indicated that a full scale audit of the CAP is currently scheduled to be performed in July 2004.

He stated that although there are no adverse trends found per criteria in procedure AP-16.3Q, Trend Evaluation and Reporting, in the area of human performance, BSC did find a pattern of errors. Specifically, 90 percent of CRs from Fiscal Year 2003 are related to human performance (40 percent), management (26 percent), and communications (24 percent). He stated that root cause of human performance issues were primarily skill-based. He also noted that rule-based and knowledge-based causes were due to less-than-adequate self-checking and omitting steps in the procedures. He added that skill-based errors are caused primarily by the amount of time it takes to complete a product according to procedural controls.

Mr. Brown added that CAR BSC-01-C-002 (CR-102), which addresses ineffective implementation of software management requirements, is an area of improvement. He stated that CR-102 corrective actions include procedure revisions/development (which include templates to ensure QARD requirements are met), training and implementation of requirements emphasis, and management improvement activities. There are two corrective actions remaining. He described the results of the OQA sponsored evaluation of software deficiency resolutions conducted by industry experts. He also reported that to date no adverse impact on code functionality or technical products has been noted.

Mr. Brown also discussed CAR BSC-03-C-107 (CR-016) regarding data management and qualification. This CAR was issued by BSC because of recurring data deficiencies. He added that, as a corrective action, BSC evaluates each technical product for procedure compliance. He further explained that the evaluation is being performed in two Phases. In Phase I, review for product compliance is completed during checking and review of AMRs, and in Phase II, reviews cover legacy data issues and are completed on approved AMRs.

Mr. Brown said that BSC issued CAR BSC-01-C-001 (CR-099) in May of 2001 and that the corrective actions included changes to address model validation issues identified in technical products, procedure enhancements, and training. BSC completed corrective actions and requested OQA verification in August 2003. OQA performed an audit of Model Reports in October 2003. OQA also verified that BSC completed 11 of the 12 CR-099 corrective actions. During the verification OQA found that six of the 20 sampled Model Reports were unsatisfactory. As a result, OQA concluded that CR-099 could not be closed.

Mr. Brown indicated that Dr. Chu and Jesse Roberson of EM had signed a new Memorandum of Agreement and an audit schedule for EM has been developed and shared with the NRC.

He explained that DOE is developing a transition plan to transfer CAP responsibility to the line that will include determining corrective action effectiveness. He also noted that DOE will ensure the transition is well managed and appropriate controls will remain in effect. In addition, this transition will be reflected in an upcoming revision to the Quality Assurance Requirement Description (QARD), which DOE expects to submit to the NRC for review and acceptance in the March time frame.

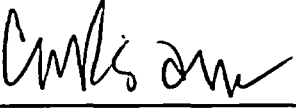
In conclusion of his presentation, Mr. Brown noted improvements in Trending Program. He stated that based on the results and findings from the fourth Quarter FY 2003 Trend Evaluation Report, DOE was able to; (1) identify the processes that are experiencing the most errors in implementation, (2) identify why those processes have errors, and (3) take focused corrective actions based on the errors' likely causes.

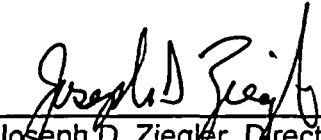
## **Closing Remarks**

In concluding the meeting, Mr. Virgilio noted the forthcoming reorganization of the NRC's Division of Waste Management into two divisions. He stated that Mr. C. William (Bill) Reamer will become the Director of a newly created High-Level Waste Repository Safety Division, which will focus on the Yucca Mountain Project. In addition, Mr. Virgilio announced that, beginning March 1, 2004, Ms. Schlueter will serve in the NRC Chairman's Office. The next NRC/DOE Quarterly QA and Management meeting is planned for May 11-12, 2004, in Las Vegas, Nevada.

## **Public Comments**

After the closing remarks, Mr. Von Tiesenhausen of Clark County stated that the Project's efforts to benchmark performance against the nuclear industry were commendable. However, he took exception to the NEI representative's general statement, from the previous day, that writing large number of deficiency reports suggests a healthy organization. Mr. Von Tiesenhausen emphasized that an effective corrective action program, which appropriately addresses repetitive conditions, should result in a decreasing number of deficiency reports. He further stated that an effectively implemented trend reporting system could be beneficial, but it should be appropriately weighted to account for the time that items remain open.

 Date: 3/31/04  
C. William Reamer, Deputy Director  
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U.S. Nuclear Regulatory Commission

 Date: 3/26/04  
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